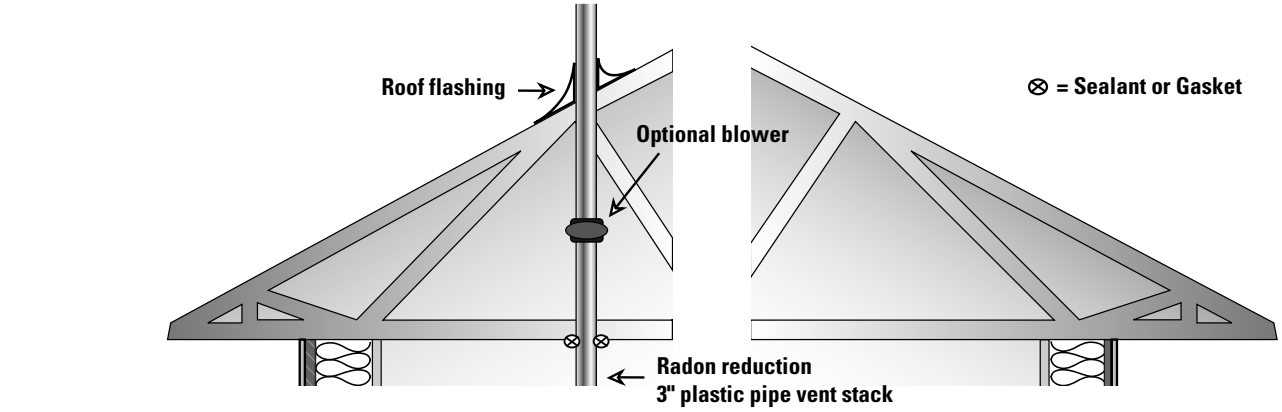
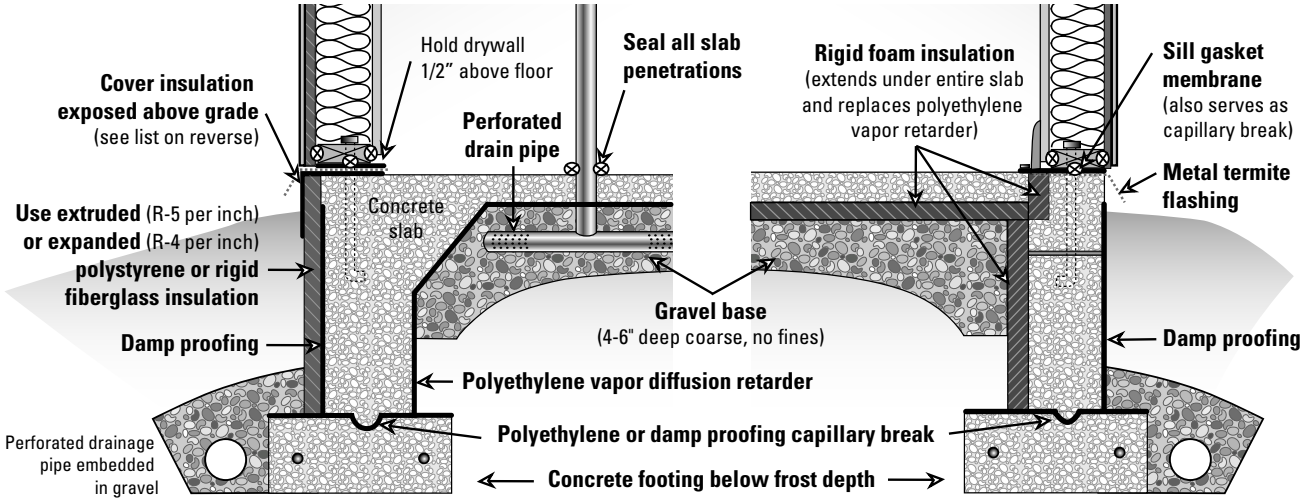
Slab Insulation
Marine Climate

Building Tips

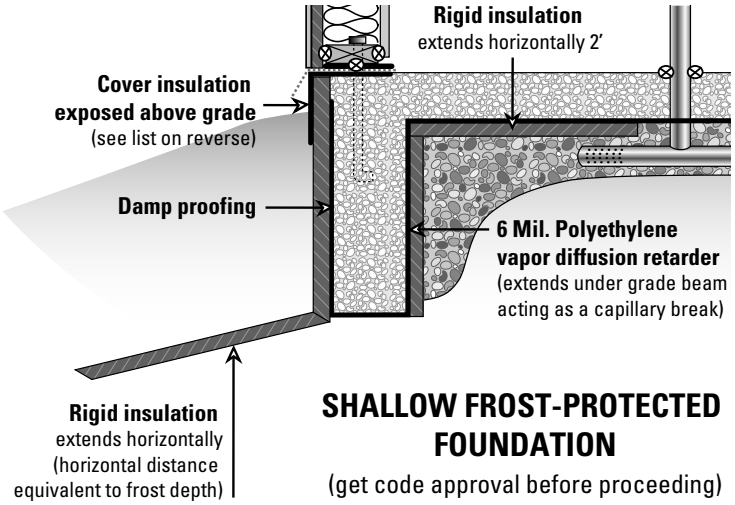
** Slab insulation may not be needed to reach energy efficiency targets of these best practices*





EXTERIOR INSULATION PACKAGE

INTERIOR INSULATION FOR FLOATING SLAB



SHALLOW FROST-PROTECTED FOUNDATION

(get code approval before proceeding)

See more information on the following page.

Slab Foundation System Moisture and Air Leakage Control

- Keep all untreated wood materials away from contact with earth and concrete.
- Design the house structure with overhangs, gutters, drainage planes, and flashing to shed rainwater and conduct it away from the house.
- Slope the earth away from the house and ensure that no irrigation strikes near the foundation.
- Use a sill gasket for air sealing
- Install a protective shield such as metal flashing, plastic L bracket, or a membrane (such as EPDM flexible roofing material*) to block capillary water wicking into the wall from the foundation. The protective shield may also serve as a termite shield.
- Slabs require a foundation drain where the slab (or floor) is located below grade. Install a foundation drain alongside the footing (not above it). The drain should rest in a bed of coarse gravel (no fines) that slopes away from the foundation and is covered with filter fabric.
- Exterior rigid fiberglass insulation may provide a drainage plane that will channel water to the foundation drain and relieve hydrostatic pressure.
- Exterior foundation wall insulation requires a protective coating at above-grade applications. Examples of protective coverings for exterior, above-grade insulation include flashing, fiber-cement board, parging (stucco type material), treated plywood, or membrane material (EPDM* flexible roofing).
- Note that some code jurisdictions may require a gap between exterior insulation and wood foundation elements to provide a termite inspection area.
- Install damp proofing or a polyethylene sheet over the footing to block capillary water wicking into the foundation side wall.
- Install a capillary break and vapor retarder under the entire slab consisting of at least a 6-mil polyethylene sheet or continuous rigid foam insulation approved for below grade applications, on top of 4 to 6 inches of coarse gravel.
- Install radon control measures (check local requirements and EPA recommendations).

**EPDM stands for Ethylene Propylene Diene Monomer.*

Sources & Additional Information

- U.S. DOE, *Technology Fact Sheet on Slab Insulation* (www.eere.energy.gov/buildings/documents/pdfs/29237.pdf).
- U.S. EPA, *Building Radon Out: A Step-By-Step Guide oni How to Build Radon Resistent Homes* (www.epa.gov/199/iaq/radon).
- Southface Energy Institute. *Fact Sheets #29: Insulating Foundation and Doors* (www.southface.org/home/sfpubs/techshts/29_insulatefloors4PDF.pdf).
- Southface Energy Institute. *Fact Sheets #30: Radon-Resistant Construction for Builders* (www.southface.org/home/sfpubs/techshts/30_radonresistantconst.pdf).
- Building Science Consortium. *Introduction to Building Systems Performance: Houses that Work II*. www.buildingscience.gov